

Enzyme Stabilizer KDF022

1. Introduction

FCC (Filter Cake Clean-up) is engineeringly designed to clean-up the filter cake created by the DIFs (Drill-In-Fluids) used to drill the regular, horizontal or deviated open-hole wells.

Biological enzyme breaker KDF002 and stabilizer KDF022 if needed are used to hydrolyze starch or starch derivatives in water-based Drill-In-Fluids (DIFs). KDF002/KHF022 combined with chelating agent KDF012 in FCC fluids not only removes the filter cake homogeneously (avoid pinholes from strong mineral acid treatment) and effectively but also simplifies the field operations (one-stage instead of multiple-stage treatment) and minimizes the environmental and corrosion footprint for horizontal or deviated open-hole filter cake clean-up process.

2. Physical Properties and Hazards

Additive	Form	Specific Gravity	Water Solubility	Melting/Flash Point (°C)	Health Hazard	Physical Hazard	pH (1% sln. in alcohol)
KDF022	Light-brown Liquid	0.95-1.05	Soluble	-	Eyes, Skin	Fire	6.0-7.0

3. Chemical Properties and Application

The optimum performance of KDF002 is obtained at pH range 5.0-5.5 and temperature of 150°F. Exposure to temperatures and pH above or below these values results in less effective enzyme activity. Enzyme stabilizer KDF022 are normally recommended when bottomhole temperature exceeds 200°F (applicable up to 275°F). The synergistic effect between enzyme and stabilizer will stabilize the enzyme and keep them active for longer time and higher temperature.

4. Treatment

0.2-1.0% volume is typically enough to keep KDF002 activity at elevated temperature. Laboratory tests are required to optimize KDF022 concentration if other additives are used in FCC systems to break specific DIF filter-cakes..

5. Packaging

KMA007 is supplied in 55 gallons high density polyethylene (HDPE) drums or 265 gallons HDPE totes. Keep it away from extreme conditions such as places near flames or direct sunlight.